REMARKS/ARGUMENTS

I. REJECTION OF CLAIMS 1, 2, 4 ,6, 8, 9, 11, 12 under 35 U.S.C. 102(b)

The Examiner has rejected claims 1, 2, 4, 6, 8, 9, 11, and 12 under 35 U.S.C. § 102(b) as being anticipated by Hashima (US Patent 5,521,843). Applicant respectfully submits that, owing to the use of similar terms by Hashima and Applicant, but such terms intended to convey distinctly different meanings, the Examiner mischaracterizes what Hashima teaches with respect to what Applicant teaches and claims.

Hashima teaches a system for real-time tracking of a single, complex, target mark by a video camera using analog data.

Applicant VanBree teaches a system for repositioning an imaging device over time intervals of months or years using digital calculations on multiple reference points.

Response to Examiner rejection of claim 1: Hashima's teaching of an "image produced when the target mark 10 is in the target position" does not teach nor anticipate Applicant VanBree's "reference image".

Applicant VanBree uses the term "reference image" to refer to the computational model extracted from an initial image of the target of interest. Hashima uses the term "reference image" to refer to an actual image to which later images are compared.

Hashima teaches in Fig. 28(A) the required relationship between the camera (20) and the target (10). Column 15 line 58 through column 16 line 8 state this relationship as: "z- and Z-axes are on the same straight line but directed opposite to each other, x- and Y-axes extend parallel to each other, and y- and X-Axes extend parallel to each other."

Applicant VanBree teaches, as shown in Fig. 3, a method for creating a reference image with no requirement for alignment of the camera (imaging device) to an arbitrary set of targets.

Hashima's teaching of a positional shift calculating unit coupled to a robot controller (50, 60 in Fig. 1) is not the teaching of Applicant VanBree's computational device (106 in Fig. 1) and positioning apparatus (108 in Fig. 1). Hashima teaches an extensive calibration of the positional shift calculating unit involving many comparisons of images to an "image produced when the target mark 10 is in the target position," where such calibration is required before the positional shift calculating unit is capable of communicating position adjustments to reposition the image capture device. Column 16 line 9 through column 19

line 26 spell out the calibration requirements in terms such as in column 16 lines 50 through 57.

Applicant VanBree teaches a method for communicating position adjustments to reposition the image capture device using a **single computation** on data extracted from two images (Fig. 4, step 222).

So, while Hashima relies on a robot controller (60 in Fig. 1) and a robot arm (30) in order for the positional shift calculating unit (50) to perform comparisons and communicate adjustments to reposition the camera (20) Applicant VanBree's invention can perform a comparison and communicate position adjustments to reposition the image capture device from a reference image and a single new image of the scene.

Hashima's teaching requires that the positional shift calculating unit be calibrated through extensive movements of the camera (20 in Fig. 1) relative to the target (10) before it can be operated. Therefore multiple reference images must be captured and analyzed before the positional shift calculating unit (50) can be used to reposition the image capture device along any of six degrees of freedom. For example, Hashima teaches that "In the Z direction, the shift is determined as a shift of the area of the black circle 11 of the target mark within the screen" (column 16, lines 21-23). Fig 31 shows the relationship {z=f(Ez)} between the distance Z and the area of the black circle 11 (Ez) that must be established before any repositioning computation along the z axis can be performed. Similarly multiple images must be analyzed to determine the equations that are used in the positional calculations for the other five degrees of freedom.

In contrast Applicant VanBree's repositioning computation requires only two images of the same scene that contain multiple reference points in three dimensional space.

II. REJECTION OF claims 3, 7, and 10 under 35 U.S.C. 103 (a)

The Examiner has rejected claims 3, 7 and 10 under 35 U.S.C. § 103(a) as unpatentable over Hashima in light of Verghese (US 7,038,709). As set forth above, Hashima does not teach Applicant's invention. As previously addressed by Applicant is response to the Examiner's prior assertion of Vergheses teaching, Verghese teaches a 2 dimensional

model that enables the tracking of a 2 dimensional object by a video camera. For example, tracking the 2d image of a speaker ("talking head") to orient the "talking head" to a viewer. Examiners' characterization that .."in addition to the teaching of Hashima et al., Verheses teaches the step of initializing includes extracting reference points from more than one image of the subject of interest representing more than one camera center.." does not apply to Applicant's invention. Moreover, Verghese only applies to two dimensional models, whereas Applicant teaches a three dimensional model.

For at least the reasons set forth hereinabove, neither Hashima, nor Hashima in combination with Verghese anticipate Applicant's invention. Applicant respectfully submits all pending claims are patentable and in condition for allowance, and earnestly solicits the Examiner to so find and allow Applicant's pending claims in their entirety.

III. REJECTION OF Claim 5 under 35 U.S.C. 103 (a)

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as unpatentable over Hashima in light of Palm (US 5,699,444). Applicant has distinguished the teaching of Hashima as not anticipating Applicant's invention. Applicant has previously distinguished the teaching of Palm, and has demonstrated that nothing in the teaching of Hashima or Palm or the combination thereof would lead a practitioner of skill in the art to reproduce the invention of Applicant. Specifically, Palm merely teaches a simplified method that can be used to extract a model of a 3-dimensional object from multiple camera views of an object using only three points whose relative positions are known precisely. Applicant's invention teaches the generation of a model of a 3-dimensional object (Step 206 in Fig. 3), however, that model can be extracted by directly measuring

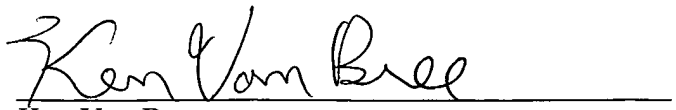
the object and does not require use of the multi-image technique taught by Palm. Furthermore, Palm teaches techniques for extracting photogrametric information from multiple images. Applicant teaches techniques for duplication of a reference image by moving an image capture device from one point in space to another utilizing 6 degrees of freedom.

Applicant submits that claim 5 is in condition for allowance as it contains patentable subject matter and allowance is earnestly solicited.

IV. CONCLUSIONS

In view of the foregoing, it is respectfully urged that all of the present claims of the application are patentable and in a condition for allowance. Notice of allowance is earnestly solicited. The undersigned applicant can be reached at 650-960-3362 to facilitate prosecution of this application, if necessary.

Respectfully submitted,

DATED: February _28,_2008 By: 

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